Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1 and 2. These Replacement sheets, which include Figures 1-5, replace the original sheets including Figures 1-5.

Attachment: Replacement Sheets

REMARKS

Claims 1-24 will be pending upon entry of the present amendment. Claims 3 and 8 are amended, and claims 23 and 24 are newly submitted herewith.

The Examiner has objected to the Figures and specification because of minor informalities, which have been addressed in the changes noted in the corresponding sections of the present amendment.

Claim 3 is objected to as requiring the word "receives," and claim 8 is objected to as reciting an "inverting input" as a separate element rather than as a component of the subtractor node. Appropriate corrections have been made to resolve these matters. With regard to claim 8, it should be noted that, while, for purposes of consistency within the structure of the claim, it is appropriate to recite the inverting input as part of the subtractor node, applicants consider any circuit that includes an inverter anywhere between the filter and the subtractor node, whether part of the filter, the subtractor node, or otherwise positioned therebetween, to be read on by, or at least equivalent to, the inverting input of claim 8. Accordingly, no claim scope is surrendered with this amendment to claim 8. Neither of the amendments, to claim 3 or claim 8, is made to distinguish the respective claim over prior art.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 5 and 12 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because of the use of the term *substantially*. The Examiner states, citing MPEP § 2173.05(b), that, "[a]lthough the specification provides the basis for the limitation of a $1/\sqrt{2}$ ratio between the high and low threshold values, there is no disclosure regarding deviation from this ratio value. In light of the specification, one of ordinary skill would not understand what is being claimed by the use of 'substantially.'" Applicants respectfully disagree. With regard to the term *substantially*, MPEP § 2173.05(b) points to several cases that support the use of the term in the claims there at issue. In one of these cases the court addresses claims reciting *substantially equal*, stating, "[t]he criticized words are ubiquitous in patent claims. Such usages, when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention ... have been accepted in patent examination and upheld by the courts." *Andrew Corp. v. Gabriel Electronics*, 847 F.2d 819, 6 USPQ2d 2010, 2012 (Fed. Cir. 1988). The court later quotes from

the MPEP, stating, "The Manual of Patent Examining Procedure instructs examiners in a similar vein.... : '[An examiner] should allow claims which define the patentable novelty with a *reasonable* degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire.'" 6 USPQ2d at 2013 (the passage quoted by the court is found at MPEP § 2173.02). Finally, the court cautions against "turn[ing] the construction of a patent into a mere semantic quibble that serves no useful purpose." *Id.* at 2013.

In the present case, the specification states, "the ratio between the second upper threshold X_H and the second lower threshold Y_L [is] *substantially equal* to $1/\sqrt{2}$." *See*, page 9, lines 4-6, (emphasis added). The Examiner has not argued that one of ordinary skill in the art would find this passage, as used in the specification, confusing or indefinite, yet the term *substantially equal*, as recited in claims 5 and 12, is used in exactly the same manner as in the specification, and is thus as clear and definite as it is in the specification. Applicants request that if the rejection is maintained, the Examiner provide a reasoned explanation, beyond the mere conclusory statement, showing that one of ordinary skill in the art would not understand *substantially equal*, as used in the specification and claims.

Claim 17 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because of the use of the term *sequentially*. The Examiner indicates that the speciation does not provide a basis for the limitation that the transduction circuit sequentially receives acceleration values from the sensors, etc. Applicants call the Examiner's attention to the text of page 11, beginning at line 17, which states, "It is moreover possible to envisage a single transduction stage, connectable in *sequence* to the outputs of the inertial sensors (or of the inertial sensor) by means of a multiplexer; in this case, the signals provided in sequence by the transduction stage, corresponding to different preferential detection axes, can be temporarily stored in a register and then provided at a pre-determined instant to the comparison stage 16." (Emphasis added.) While not limited to this embodiment, This passage provides adequate support for the limitations of claim 17.

For the reasons outlined above, withdrawal of the rejections under 35 U.S.C. § 112 is respectfully requested.

Prior to addressing the substantive rejections, applicants wish to discuss features of the Blank reference to simplify the discussion of Blank as it compares to the claims. In the remarks and arguments that follow, when citing to specific text from Blank, simple column numbers and line numbers will be used, separated by a colon; for example, 4:22, to indicate page 4, line 22 of Blank.

Blank is directed to a system for controlling the deployment of airbags in a vehicle, in particular with reference to head-on collisions (2:45, 46). While Blank provides a sensor 33 arranged transversely to a longitudinal axis of the vehicle (4:35, 5:38), there is no disclosure as to how data from this sensor is employed. In fact, beyond disclosing the sensor 33, Blank is entirely silent with regard to its function. Instead, the discussion of the operation of the device is with respect to reduction in [forward] speed of the vehicle (5:42-46) as detected by an impact sensor 1 positioned near the front of the vehicle (2:2-8; 4:36-38, 45-51) and a sensor 32 positioned in a central region of the vehicle (2:16, 17; 4:29-36; 6:26-28).

In operation, Blank employs the impact sensor 1 as an early detection device to detect a collision before it affects the speed of the central portion of the vehicle (2:63, 64). The impact sensor 1 outputs a code CO_x based on an evaluation of the amplitude of a speed reduction and the time over which it occurs (5:66-6:16; 6:39-52), which is transmitted to a central control unit (5:17-20). Data from the centrally positioned sensor 32 is evaluated according to a number of threshold values and a corresponding variable signal LEVx is set (6:26-38). The central control unit then determines an appropriate response (i.e., deployment of the vehicle airbag) based in the signals from the impact sensor 1 and the central acceleration sensor 32 (6:53-65).

There are several aspects of Blank's system that are noteworthy. First, all of the data used in Blank's evaluation is derived from the impact sensor 1 and the centrally positioned sensor 32, which are both oriented along a common axis of sensitivity (see Figure 1). Second, the separate signals from the impact sensor 1 and the centrally positioned sensor 32 are not derived from the same kind of stimuli; the signal from the impact sensor 1 is derived from an impact over time, i.e., a combination of strength and duration of speed reduction (see Figure 4, 5:66-6:4), while the signal from the centrally positioned sensor 32 is derived from acceleration only (6:26-29). Third, the accelerations being detected by the impact sensor 1 and the centrally positioned sensor 32 are separate, i.e., the sensors are not sensing different axial components of a

common acceleration event, but rather entirely different events (2:63-67). Fourth, Blank provides no correlation between the relative levels of the thresholds used to establish the signals from the impact sensor 1 and the centrally positioned sensor 32. Finally, Blank's system makes no response to a condition in which one of the sensors detects an acceleration while the other detects nothing. The matrix provided in Figure 5 only shows responses when each sensor detects at least some respective deceleration value of CO_x (6:41-43) and LEVx (6:33, 34). Blank states that the "matrix according to FIG. 5 provides information on the conditions under which triggering should take place" (6:53,54), thus, if the condition is not shown on the matrix, triggering should not take place.

Rejections Under 35 U.S.C. § 102(b)

Claims 1, 4, 9-11, 13-14, 17-18 and 21-22 are rejected under 35 U.S.C. § 102(b) as being anticipated by Blank et al. (US 6,274,948, hereafter, *Blank*).

The standard that must be met to reject a claim under § 102 is outlined in the MPEP at § 2131:

> A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.... The identical invention must be shown in as complete detail as is contained in the ... claim.

(Citations omitted.)

Blank fails to anticipate claim 1, which recites, in part, a "... device having a plurality of preferential detection axes, comprising: inertial sensor means, which are sensitive to accelerations parallel to said preferential detection axes ... and second comparison means for supplying [a] pre-determined logic value when each of said acceleration signals is greater than a respective lower threshold ...."

In particular, while Blank provides acceleration sensors 32, 33 that are sensitive to accelerations of a control unit 3 along two axes, it does not supply a predetermined logic value when an acceleration signal from each of these sensors is greater than some threshold. There is no disclosure of any signal being supplied by the second of the sensors 33. In fact, because there is no disclosure with regard to what function is served by the sensor 33, the sensor 33 cannot be relied upon to anticipate elements of any claim. Instead, Blank correlates signals from sensor 32

associated with the control unit 3 with signals from a remote impact sensor unit 1 to determine a required action; the sensor 32 of the control unit and the impact sensor unit 1 each sense speed reduction along a common axis, not a plurality of axes. Accordingly, claim 1 is allowable over Blank. Dependent claims 2-8 are also allowable as depending on an allowable base claim.

Claim 4 recites that "said upper thresholds are equal to one another, and said lower thresholds are equal to one another." Blank fails to anticipate upper or lower thresholds that are equal to each other. In rejecting claim 4 the Examiner cites Blank's column 6, lines 23-52, and the matrix of Figure 5. However, the cited text makes clear that the criteria for establishing the codes CO_1 to CO_4 of the impact sensor 1 are not equal to those for establishing the variables LEV1 to LEV3 of the sensor 32. In particular, Blank states that the codes CO_1 to CO_4, are formed by "not only the strength of an impact, but also its dynamic." (6:50-52.) Thus, they are determined by a combination of deceleration and time (*see* 6:39-52). Meanwhile, the variables LEV1 to LEV3 are derived from acceleration, only: "[t]his speed reduction is subsequently compared with different threshold values ...." (*See* 6:26-33.) So not only are the thresholds not equal, they are not even the same kinds of values, the one being determined by acceleration over time, and the other by acceleration only. Clearly, claim 4 is allowable on its own merits, apart from depending from an allowable base claim.

Claim 9 recites, in part, "a device for reactivation from stand-by." Blank fails to anticipate this limitation. Blank is directed to a system for controlling inflation of vehicle airbags upon a head-on collision of the vehicle (see 2:46 and 4:39-44). *Reactivation from standby*, as is well known in the art, is a term applied to situations in which a device that is in an active mode goes into a standby mode due, for example, to a period of non-use, and is then reactivated when a user returns to use the device. This concept cannot be applied to Blank, because the airbags have never previously been in use, and do not go from an active mode to a standby mode. Indeed, if an airbag is once active, it cannot be used again, but must be replaced; thus, a *re*activation is impossible. On the other hand, while a vehicle is in operation, the airbag sensors must be constantly active so as to continually protect the occupant. On this basis alone, claim 9 is allowable over Blank. Blank also fails to anticipate other limitations of claim 9, for reasons that will be apparent upon a review of the arguments put forth in support of the allowability of claims 1 and 10, for example.

Claim 10 recites, in part, "supplying a pre-determined logic value when at least one of said acceleration signals is greater than a respective upper threshold ...." Blank fails to anticipate this limitation of claim 10. Blank's system does not react when *at least one* of the sensors 1 or 32 detects a speed reduction, however strong, but only when both sensors detect a speed reduction. Note, for example, the matrix of Figure 5. The minimum condition under which the airbag is deployed includes a code CO_3 — "a large speed decrease ... achieved in a time interval of a middle ranking length" — from the impact sensor 1 (6:46-48), in combination with a variable LEV1 — "exceeding "a first low threshold value" — from the central acceleration sensor (6:34). As previously noted, there is no teaching that airbags are triggered under any conditions that are not outlined in matrix of Figure 5. Clearly, Blank does not supply a pre-determined logic value when at least one acceleration signal is greater than an upper threshold, but only when both signals are greater than some respective threshold. Because Blank fails to anticipate this limitation, claim 10 is allowable thereover.

Claim 13 recites, in part, "an acceleration circuit configured to produce a dynamic acceleration signal corresponding to a level of acceleration in each of a plurality of detection axes....." Blank fails to anticipate this limitation of claim 13. Instead, Blank's sensors 1 and 32 respond to a common axis. Claim 13 is thus allowable over Blank. Dependent claims 14-20 are also allowable.

Claim 14 recites, in part, "a sensor configured to sense acceleration in each of the detection axes; and a transduction circuit for each of the detection axes ...." Blank fails to anticipate this limitation of claim 14. Instead, Blank employs two separate sensors 1 and 32, not *a* sensor. Accordingly, claim 14 is allowable on its own merits.

Claim 21 recites, in part, "producing a selected logic value if the level of the acceleration with respect to any one of the plurality of axes exceeds the high threshold ...." Blank fails to anticipate all of the limitations of claim 17. In particular, Blank's system provides a triggering signal only if acceleration detected by both sensors 1 and 32 exceeds a respective value. Claim 21 is therefore allowable, together with dependent claim 22.

Rejections Under 35 U.S.C. § 103(a)

Claims 2, 3, 5, and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Blank; claims 6-7 and 16 are rejected as being unpatentable over Blank in view of Oguchi (US 2002/0033047); and claim 8 is rejected as being unpatentable over Blank in view of Oguchi in further view of Ishiyama (US 6,738,214).

With regard to the rejections of claims 2, 3, 5, and 12, it has been demonstrated that Blank cannot anticipate the respective base claims, nor has the Examiner argued that either of claims 1 or 10 would be obvious in view of Blank. No prior art has been adduced that can remedy Blank's deficiency. Accordingly, claims 2, 3, 5, and 12 are allowable as depending from allowable base claims.

With regard to claims 5 and 12, the Examiner argues that mere experimentation would have found the ratio of $1/\sqrt{2}$ as the optimum value. However, the Examiner has not shown why such a ratio would be optimal in a case where both sensors 1 and 32 are sensitive to acceleration along the same axis. Unless such a condition can be demonstrated, no amount of experimentation can be shown to arrive at the recited ratio. Accordingly, these claims are separately allowable over Blank.

With regard to claims 6, 7, and 16, the base claims 1 and 13 have been shown to be allowable over Blank, and Oguchi cannot remedy Blank's deficiency. For example, Oguchi's sensor only provides a sensor sensitive to a single axis of acceleration, and further does not teach or suggest the transduction means, the first or second comparison means of claim 1, or the comparator or logic circuits of claim 13.

With regard to the rejection of claim 8, neither Oguchi nor Ishiyama can remedy Blank's deficiency. Ishiyama, for example, does not teach or suggest the first or second comparison means of claim 1. Accordingly, claim 8 is allowable over the art of record.

With regard to the rejection of claims 15, 19, and 20, neither Blank nor Oguchi teach or suggest the comparator or logic circuits of base claim 13, and thus a combination of these claims cannot teach or suggest the limitation of claim 13 or claims 15, 19, and 20, which are therefore allowable over the art of record.

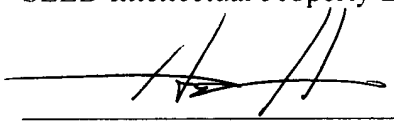
New claims 23 and 24 are fully supported by the specification. In particular, support for claims 23 and 24 can be found in the specification at page 2, lines 3-7, page 5, lines 11-15, and page 11, lines 11-14.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicants' undersigned representative at (206) 694-4848 in order to expeditiously resolve prosecution of this application.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC



Harold H. Bennett II
Registration No. 52,404

HHB:wt

Enclosure:
3 Sheets of Replacement Drawings (Figures. 1-5)

701 Fifth Avenue, Suite 5400
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031

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